

Book Reviews

STANDARDS FOR DATA COLLECTION FROM HUMAN SKELETAL REMAINS. Edited by Jane E. Buikstra and Douglas H. Ubelaker. Fayetteville, AR: Arkansas Archeological Survey. 1994. 206 pp. ISBN 1-56349-075-7. \$25.00 (paper).

This book is somewhat like an unplanned pregnancy. The participants regret the events that precipitated its "conception" but the end result is found to be a welcome and valuable addition to their lives, in this case, the community of researchers in skeletal biology. As the editors explain in Chapter 1, the stimulus for the volume was the concern for the loss of scientific knowledge as a result of the NAGPRA legislation in the United States and the impending repatriation (or halted excavation) of skeletal remains. Forced to accept the fact that many collections would be reburied with limited or no analyses, a standards committee was formed after the 1988 Paleopathology Association meetings. As a result of this committee's work, the editors, in association with Jonathan Haas of the Field Museum in Chicago, helped to organize a seminar/workshop charged with developing standards for the collection of osteological data in 1991. This volume, containing submissions by the editors and 12 other contributors, is the result of that effort.

The book is designed specifically for English-speaking and, particularly, North American readers. While the cited references include the various early and recent versions of the famous *Lerbuch* published in German, it appears that very few North American students make much use of these sources. I suspect that readers on other continents will detect a touch of parochialism in this text. Nevertheless, the editors wisely concede that the book presents a limited set of criteria necessary for contemporary and future researchers. But beyond the details of measurement descriptions and trait observations it also contains some important guidelines for skeletal biologists to achieve

meaningful comparative results when trying to reconstruct the lives of ancient peoples.

Conceptually, there are some conflicts associated with any attempt to develop data collection standards. Standards were promoted by the forebears of physical anthropology but then became associated with rigid typology when skeletal biology turned toward problem-oriented research. The problem-oriented approach has not only encouraged but celebrated individualized data collection strategies. Each new student, explicitly or implicitly, was expected to come up with not only new problems and questions but new methodologies or observations that no one had thought of before. The reevaluation of past work, supposedly the testing of proposed scientific hypotheses, has been given scant attention. This is partly a function of our samples. Skeletal biologists are somewhere between the paleontologists, who are rigidly constrained by the peripatetic discovery of few fossils, and the astronomers, who race each other to find new celestial bodies but are constrained only by the size and quality of their telescopes. Since cultural codes dictate the disposition of human remains, skeletal biologists will always be close to the "social" side of their science.

Consequently, the book's most important message is to promote the collection of as much primary data as possible. Primary data stay as close to the original specimen as one can get without keeping all of the bones. Primary data include photographs, diagrams, X-rays, casts, and tissue samples. The section in Chapter 2 on the recording of images is particularly helpful. Many useful tips are provided about the types of film to be used, techniques for laboratory photography of unburned and burned bones, and guidelines for data storage. Small details like these that a researcher usually must figure out alone can often make the difference between properly saved and lost data. The summary of tissue sample collection and curation provided in Chapter 12 is also one of the most important sections of the book (although the table is mislabeled in the text).

One step removed from primary data are

data recorded by the observer but which can be reevaluated by other researchers. These include tooth formation stages, dental wear scores, aging criteria scores, measurements, and observations of nonmetric traits. Why report that an individual is 6 years of age when this can be confirmed by a series of aging criteria that can be rechecked by other researchers? Here again, the content in the various chapters is detailed, thoughtful, and often insightful. Twelve text chapters summarize data collection for sex determination, age estimation, work with immature remains, dental data, adult metrics, nonmetrics, postmortem changes, paleopathology, and cultural modifications. The last two of these discuss recent technical developments for assessing the antiquity of bones, histomorphometry, health status, diet, and means of assessing genetic relationships. They provide the reader with the stimulus for novel research ideas and the immediate need for a new edition of the book to update these developments!

Following a concluding statement are two appendices which include a glossary of terms and recommendations for controlling inter- and intraobserver error. While most scientists are usually thoroughly drilled about observer error, it hasn't penetrated the consciousness of skeletal biologists sufficiently, so that this appendix would have been best served as an introductory chapter. At the end are included a series of data coding sheets which accompany the text in previous chapters. Subsequent to the book's publication there has followed a software version of the standardized osteological database and this will be a welcome supplement.

What is there to quibble with? Each researcher will have his or her own complaints, although these should not diminish the impact of the overall product. Age categories for commingled remains listed in Chapter 2 do not correspond with accepted demographic categories, "infant" being equivalent to birth to 3 years, rather than equivalent to birth to 1 year. The possibility of sex determination for immature individuals is dismissed, and even though one of my own publications is cited for this statement, it would be nice to see a more positive attitude. Success in subadult sex determination, possibly

using genetic data, would yield so much more important information to us.

Chapters 5 and 6, dealing with tooth pathology, morphology, and measurement, contain some welcome recommendations. However, why not use the international code which identifies side for tooth inventories? The inventory categories for caries are helpfully detailed but the entire issue of how to record caries sample frequencies is a muddled one which could do with a thorough discussion. Descriptions of tooth measurements switch between the use of "length" and "width" to describe crown diameters, but it was nice to see that the authors provide a sensible explanation for using maximum crown diameters rather than measures between contact points, although no mention is made of any need to measure deciduous teeth. While the recommendation is to preserve tooth data by casting the mandible (casting the maxilla would preserve primary morphological and metric data for upper teeth too), it would be worthwhile to consider some of the improvements in data retrieval that might make some of these methods obsolete and which would apply to skeletal measurement as well. While improvements in technology continue to increase exponentially and prices decrease, it is still too expensive and difficult to expect all but the smallest, most valuable collections to be cast by precise laser technology, or for dental and cranial measurements to be collected in three dimensions using advanced image analysis systems. This topic would make a good chapter in a subsequent edition.

One of the best chapters because of its thoroughness is that covering paleopathology and the importance of standard terminology. Nevertheless, some will find the data collection protocol here hard to follow. Observers will need to keep their numerical coding keys close at hand and may find it is easy to make recording errors. What might work better is a "flip-through" type of visual coding catalog where each numerical key is directly associated with an illustrative photograph or diagram.

Among the topics given less attention are nonmetric skeletal traits (Chapter 8) and cultural modification (Chapter 11), although a good series of references is provided. In

very practical terms, the double metal ring binding for the book was a wise choice for something intended for the lab, but a different hole punch to the paper and different quality paper and cover are in order. My own copy's cover is already starting to rip out.

Even if skeletal biologists do not adopt all of the standards recommended here, they and their students should read the book carefully that we might achieve some modal

level of good scientific comparison. Despite recent criticisms of the inherent limitations of studying mortality samples, this book is a clear celebration of the continued potential of such work.

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ANTHROPOID ORIGINS. Edited by John G. Fleagle and Richard F. Kay. New York: Plenum Press. 1994. 708 pp. ISBN 0-306-44791-6. \$139.50 (cloth).

For those of us whose work does not center on early anthropoids or putative proto-anthropoids, the many new taxa, new dates, and new interpretations of phyletic relationships that have emerged in the last decade have generated both excitement and confusion. There has never been a greater need for a critical volume on anthropoid origins. After John Fleagle remarked to me recently in another context that "all the major problems in primate systematics are solved," I felt I had to read *Anthropoid Origins* soon because he clearly knew something very important that I didn't. What I found in *Anthropoid Origins* was a surfeit of up-to-date information and generally very well constructed analyses in a smoothly edited sequence of 19 chapters. What I did not find were the major problems of anthropoid origins solved.

The chapters in *Anthropoid Origins* represent the peer-reviewed and revised versions of papers presented at the conference and workshop on anthropoid origins held at Duke University in May 1992. The chapters are thoughtfully arranged in a sequence of four main subjects, beginning with an overview of primate origins and the earliest euprimates. This is followed by nine chapters which review the early anthropoids or putative anthropoid forbears by geographical region. These are then followed by a review of the paleogeographical context of anthropoid origins, and, finally, by a series of seven

chapters in which the anatomical evidence for anthropoid origins is reviewed by region, roughly from teeth to toes.

The first chapter by Rose, Godinot, and Bown sets the stage for the volume by concisely reviewing the phylogenetic relationships of Primates to other higher mammalian taxa, the status of pleiadapiforms, and the nature of the earliest euprimate radiations, topics which could easily have formed the core of a volume in their own right. Their balanced discussion of pleiadapiform affinities emphasizes that while the group does not belong within Primates, it will continue to be crucial in discussions of primate origins, either as a sister group or as a "primate-like adaptive group" (p. 7). The authors' discussion of the earliest euprimates reveals the important theme, emerging in several subsequent chapters, that the earliest euprimate radiations may have included protoanthropoids, in addition to adapids and omomyids, and that anthropoids may not have been derived from either of the latter groups. They conclude that the earliest episode of primate evolution involved three, if not four, collateral radiations (four, if one includes the *Altanius* lineage). The serious prospect that anthropoid origins may be pushed back one node at first provokes a deep intake of breath and then becomes a refreshing and important insight.

The geographical section of the volume commences with two reviews of new North American primate fossils, and their bearing on anthropoid evolution. The first of these, by Covert and Williams, considers Eocene omomyids and adapids. The authors begin by making the important point that previous